Quality System Regulation Overview

FDA Small Business
Regulatory Education for Industry (REdI)
Bethesda, MD
September 26, 2013

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Overview

- Background
- Definitions
- Parts Covered
  - Management Responsibility
  - Quality Audits
  - Personnel
  - Production and Process Controls
    - Process Validation
  - Equipment and Facility Controls
  - Document, Records & Change Controls
- Resources

Background

- The Quality System Regulation (QS Reg)
  - Effective on June 1, 1997
  - Replaces 1978 GMP for medical devices
- *Preamble* QS Reg - VERY Important!
- Requirements are not prescriptive
  - Provides framework of basic requirements for manufacturers to follow

How can the QS Regulation cover so many types of devices?

- Flexible regulation
- Requirements are stated in general terms…

  Each manufacturer shall Establish and maintain a quality system that:

  1. Is appropriate for the specific medical device(s) designed and/or manufactured
  2. Meets the requirements of this part (part 820)

  21 CFR 820.5

Bottom line …
It's your Quality System!

- A manufacturer must develop a Quality System (QS) commensurate with the:
  - Extent of the activities to be carried out
  - Risk presented by the device
  - Complexity of the device and manufacturing processes
  - Size and complexity of manufacturing facility

Harmonization of Quality System Requirements

- ISO 13485: revised & reissued 2003 as a stand alone quality system standard for medical device manufacturers
- ISO 13485: 2003 and 21 CFR Part 820 are harmonized; Each may have additional requirements but they do not conflict with one another.

Quality System Regulation

Definitions 21 CFR 820.3 (l)

- ***Finished device*** means any device or accessory to any device that is suitable for use or capable of functioning, whether or not it is packaged, labeled, or sterilized.

Quality System Regulation

Definitions 21 CFR 820.3 (o)

- ***Manufacturer*** means any person who designs, manufactures, fabricates, assembles, or processes a finished device. Manufacturer *includes* but is not limited to those who perform the functions of contract sterilization, installation, relabeling, remanufacturing, repacking, or specification development, and initial distributors of foreign entities performing these functions.

Quality System Regulation

Definitions 21 CFR 820.3 (k)

- ***Establish***
  - Define
  - Document
  - Implement (Do)

Quality System Regulation

Definitions 21 CFR 820.3 (v)

- ***Quality system*** means the organizational structure, responsibilities, procedures, processes, and resources for implementing quality management

Evolution of Quality

- *Quality Control*: Test/inspect components/finished products vs. approved specifications
- *Quality Assurance*: Manufacture quality into product
- *Quality System:* Design and manufacture quality into products

The 7 Subsystems of a Quality System

Management Controls

Purpose

- Provide adequate resources for device design, manufacturing, quality assurance, distribution, installation, and servicing
- Assure proper function of the quality system
- Monitor the quality

21 CFR 820.20

Quality Policy

- *Management with executive responsibility* shall:
  - Establish its policy and objectives for, and commitment to quality
  - Ensure that the ***quality policy*** is understood, implemented, and maintained at all levels of the organization

21 CFR 820.20(a)

Organization

- Establish and maintain an adequate organization structure to ensure that devices are designed and produced in accordance with the requirements of this part.

  21 CFR 820.20(b)

The Preamble on Organization

- The organizational structure should ensure that the technical, administrative and human factors functions affecting the quality of the device will be controlled, whether these functions involved hardware, software, processed materials, or services. All such control should be oriented towards the reduction, elimination, or ideally, prevention of quality nonconformities.

  Preamble, Comment 46

Appointment of Management Representative

- Management with executive responsibility shall
  - Appoint a member of management as ***management representative***
  - Document such appointment

21 CFR 820.20(b)(3)

Management Representative's Responsibilities

- Ensure that quality system requirements are effectively established and effectively maintained in accordance with this part
- Report on the performance of the quality system to *management with executive responsibility* for review

21 CFR 820.20(b)(3)

Management Review

- *Management with executive responsibility* shall review the effectiveness of the quality system:
  - -At defined intervals
  - -With sufficient frequency
  - -According to established procedures

- to ensure that the quality system satisfies the requirements of this part and the manufacturer's established quality policy and objectives

  21 CFR 820.20(c)

Management Review continued

- Document dates and results of quality system reviews
- Manufacturers are not required to make management review reports available to FDA employees during inspections
- Manufacturers must make *procedures* for management reviews available to FDA employees for review during inspections

21 CFR 820.20(c) & 820.180(c)

Quality System Procedures

- Establish quality system procedures and instructions
- Establish an outline of the structure of the documentation used in the quality system *where appropriate*

21 CFR 820.20(e)

Quality Audits

- Establish procedures for quality audits.
- Conduct audits to assure compliance by individuals not having direct responsibility for areas audited.

  21 CFR 820.22

Quality Audit continued

- Perform corrective action(s), including re-audit of deficiencies.
- Generate a written report of audit results for management review.

21 CFR 820.22

Personnel

- Hire sufficient personnel with necessary education, background, training, and experience.
- Establish procedures for identifying training needs and to ensure personnel are adequately trained.
- Document training.

  21 CFR 820.25

Personnel Continued

- Make personnel aware of device defects that could occur from improper job performance.
- Make personnel aware of defects and errors that could be encountered as part of their job.

21 CFR 820.25

Production & Process Control

- *Purpose:*

to manufacture products that meet specifications

21 CFR 820.70

General Process Controls

- Develop, conduct, control and monitor production processes to ensure that a device conforms to its specifications
- Where deviations from device specifications could occur as a result of the manufacturing process, establish and maintain process controls necessary to ensure conformance to specifications.

21 CFR 820.70(a)

Production and Process Changes

- Establish and maintain procedures for changes to a specification, method, process or procedure.
- Verify or where appropriate validate changes according to 21 CFR 820.75 before implementation
- Approve changes in accordance with 21 CFR 820.40

21 CFR 820.70

Personnel Practices - Production

- Establish and maintain requirements for the health, cleanliness, personnel practices, and clothing of personnel if contact between such personnel and product or environment could reasonably be expected to have an adverse effect on product quality

  21 CFR 820.70(d)

Process Validation

- Establishing by objective evidence that a process consistently produces a result or product meeting its intended/predetermined specifications.
- Where the results of a process cannot be fully verified by subsequent inspection and test, the process shall be validated with a high degree of assurance and approved according to established procedures.

21 CFR 820.75

Process Validation continued

- Validate processes that cannot be fully verified by subsequent inspection and testing
- Monitor and control process parameters for validated processes to ensure that the specified requirements continue to be met
- Document all validation activities

  21 CFR 820.75

Process Validation continued

Revalidation

- When changes or process deviations occur, the manufacturer shall review and evaluate the process and perform revalidation where appropriate

  21 CFR 820.75(c)

Facility & Equipment Control Subsystem

- Purpose
- Design facilities that work
- Qualify equipment installation
- Maintain equipment
- Calibrate equipment
- Control environment
- Implement contamination controls

Facility & Equipment Control Subsystem

Purpose:

To assure that devices are not adversely affected by the manufacturing environment, buildings or equipment

Buildings

- Buildings should be of suitable design and contain sufficient space to perform necessary operations, prevent mix-ups, and assure orderly handling

  21 CFR 820.70(f)

Equipment: Installation

- Ensure that all equipment used in the manufacturing process meets specified requirements and is appropriately designed, constructed, placed and installed to facilitate maintenance, adjustment, cleaning and use.

  21 CFR 820.70(g)

Equipment Requirements

- Establish and maintain equipment maintenance schedules and procedures.
- Conduct and document periodic inspections in accordance with procedures
- Post any limitations or allowable tolerances visibly close to equipment or make it readily available to persons performing periodic adjustment

21 CFR 820.70(g)(1),(2) and (3)

Environmental Control

- Where environmental conditions could reasonably be expected to have an adverse effect on product quality, establish and maintain procedures to adequately control environmental conditions
- Periodically inspect environmental control system(s) to verify that the system, including necessary equipment, is adequate and functioning properly
- Document and review environmental control activities

21 CFR 820.70(c)

Contamination Control

Establish and maintain procedures to prevent contamination of equipment or product by substances that could reasonably be expected to have an adverse effect on product quality

21 CFR 820.70(e)

Documents, Records and Change Control

Purpose - to assure only current documents are used and all records are maintained:

- Changes are reviewed, approved and incorporated into documents

  21 CFR 820.40

- Documents are maintained for the required length of time

  21 CFR 820.180

Document Controls

- Establish and maintain procedures to control all documents required by Part 820 (approval/distribution/changes)
- Documents required by Part 820 shall be available at all locations for which they are designated, used, or otherwise necessary. Remove all obsolete documents promptly or otherwise prevent their unintended use

21 CFR 820.40

Documents, Records and Change Control continued

Document Retention- assure records are maintained for the required length of time

Retain all records required by Part 820 for the **expected life of the device or at least 2 years** from the date of release for commercial distribution -- if the device is short-lived

21 CFR 820.180

Device Master Record

Definitions 21 CFR 820(j)

- ***Device master record (DMR)*** means a compilation of records containing the procedures and specifications for a finished device.

Device Master Record

Include in the DMR:

1. *Device specifications*
2. Production process specifications
3. Quality assurance procedures and specifications
4. Packaging and labeling specifications
5. Installation, maintenance and servicing procedures and methods

21 CFR 820.181

Device History Record

Definitions 21 CFR 820.3(i)

- ***Device history record (DHR)*** means a compilation of records containing the production history of a finished device.

Device History Record

- DHR shall include:
  1. *Dates of manufacture*
  2. *Quantity manufactured*
  3. *Quantity released for distribution*
  4. *Acceptance records which demonstrate the device is manufactured in accordance with DMR*

  21 CFR 820.184

Additional Quality System requirements not discussed

- Design Controls - 820.30
- Identification and Traceability - 820.60 & 820.65
- Acceptance Activities - 820.80 & 820.86
- Corrective and Preventive Action - 820.100
- Labeling & Packaging - 820.120 & 820.130
- Handling, Storage, Distribution & Installation - 820.140, 820.150, 820.160 and 820.170
- Servicing - 820.200
- Statistical Techniques - 820.250

For more information

Visit the QS website at
http://www.fda.gov/MedicalDevices/DeviceRegulationandGuidance/PostmarketRequirements/QualitySystemsRegulations/default.htm

- Preamble to the final rule published 1996 in the Federal Register
- Title 21, Code of Federal Regulations, Part 820 (21CFR 820)
- "Quality System Information for Certain Premarket Application Reviews: Guidance for Industry and FDA Staff": 2003
- Quality System Inspection Technique (QSIT Guide)
- Compliance Program (7382.845)
- COMPARISON CHART 1996 QUALITY SYSTEM REGULATION vs 1978 GMP REGULATION vs ANSIIISOIASQC Q9001-1994 AND ISO/DIS 13485:1996

Information continued

Device Advice

http://www.fda.gov/MedicalDevices/DeviceReulationandGuidance/PostmarketRequirements/QualitySystemsRegulations/default.htm

CDRH Learn QS Module Training

http://www.fda.gov/Training/CDRHLearn/ucm162015.htm

Contact DSMICA

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Questions